



PC Builder

Fancy a home entertainments system? Alex Watson shows you how to build your own Media Center PC and provides advice on specifications, hardware and the problems you may encounter along the way



SATA II ARRIVES

Samsung, Western Digital and Hitachi have all launched hard disks based on the new SATA II standard. Samsung's 250GB SATA II drive, the SpinPoint P120, is shipping from Komplett (www.komplett.co.uk), while Hitachi's 500GB 7K500 and Western Digital's Caviar SE16 are about to go on sale.

SATA hard disks are now common in new PCs as they offer advantages over disks with Parallel IDE connections. The cables are much smaller, and there's no need to fiddle with jumpers to define a master and a slave drive.

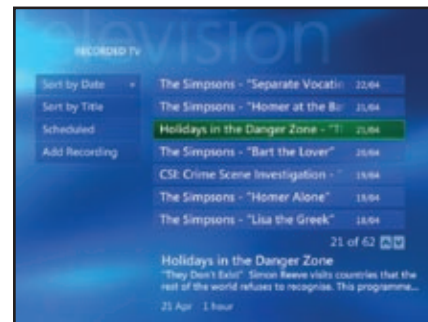
At 300MB/s SATA II offers twice the bandwidth of SATA. We have tested Hitachi and Samsung's SATA II disks in our hard disk Labs on page 168. Both can be expected to perform faster in a new-build PC with a modern motherboard to take full advantage of SATA II's faster transfer rates.

Windows XP Media Center Edition (MCE) turns a standard Windows PC into a home entertainment system capable of playing digital music, videos, DVD and TV. It also lets you pause live TV and record entire TV series at the touch of a button.

It's an interesting product for the amateur PC builder, but it's not easy to add to a custom PC. At first, Microsoft only made Windows XP Media Center Edition (MCE) available to system suppliers. Unless you went to Evesham or Mesh, you weren't able to buy it. Microsoft has changed its stance with the 2005 version of MCE and you can buy copies from websites such as www.overclock.co.uk for about £80, plus another £30 for the remote control. This is little more than the price of a full OEM copy of Windows XP Home. Building your own media PC still isn't simple, though, so we've devoted this month's *PC Builder* to the steps involved. We recommend that only experienced PC users attempt this project.

GETTING STARTED

MCE was originally sold only to large companies because it's much fussier than Windows XP Home and Professional when it comes to hardware. While you can install it on any PC capable of running Windows XP, you need an MCE-approved TV tuner to access its TV functions.



Windows Media Center Edition turns your PC into a video recorder with advanced features

MCE has been around for a couple of years now, so compatible hardware is easier to find than it was. Companies such as AVerMedia, Hauppauge and Compro all produce tuners that are compatible with MCE 2005. Your other consideration is the kind of tuner you want: a standard analogue one to get the regular five terrestrial channels or a DVB-T digital tuner that can receive Freeview digital channels. Digital tuners can receive more channels, but most can't capture analogue video, which you'll need if you want to use your media PC to edit your old analogue home videos.

If you have only one tuner, bear in mind that you'll only be able to record the channel you're

PC HARDWARE FOR THE LIVING ROOM

If you want to build a Media Center that can live in your lounge, you can use some special hardware for a quieter, smarter PC

REVIEW MOTHERBOARD

AOPEN i915GMm-HFS

RATING ★★★★★

PRICE £194 inc VAT

SUPPLIER www.kustompcs.co.uk



The i915GMm-HFS is AOpen's second stab at a desktop Pentium M motherboard, and it's fantastic. It supports dual-channel DDR2 memory and has PCI-E slots so you can use the latest graphics cards. Based on the Intel 915GM chipset, the board includes integrated graphics that are adequate for all tasks except gaming. It has DVI, D-sub, S-video, component and HDTV outputs, as well as 7.1 surround sound and optical S/PDIF connections. It might be pricey, but you needn't add much more for a complete media PC.

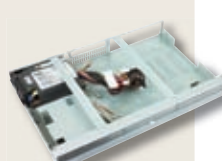
REVIEW CHASSIS

HIPER Media Chassis

RATING ★★★★★

PRICE £53 inc VAT

SUPPLIER www.x-case.co.uk



Small bare-bones chassis from the likes of Shuttle and AOpen are an option if you want to build a media PC. If you're not too fond of their bread-bin shape, however, Hiper's Media Chassis will be more to your taste. It's the same shape as a stereo amplifier, and because it takes microATX motherboards, it's the perfect partner for the AOpen i915GMm-HFS. Hiper includes a 200W power supply with the case, so it'll never power a monster PC, but as the super-slim case limits you to a laptop-style CD-ROM drive and a single hard disk, that hardly matters.

REVIEW DVB TUNER

AVERMEDIA AVerTV DVB-T USB 2.0

RATING ★★★★★

PRICE £75 inc VAT

SUPPLIER www.specialtech.co.uk



If you want more than five channels but don't want to pay for the mind-boggling number of options Sky offers, Freeview is ideal, adding 24-hour news, extra BBC channels and a host of others. AVerMedia's AVerTV box allows you to receive Freeview with the minimum of effort. Just hook it up to a USB port and you're away. It works flawlessly with Windows Media Center Edition and is small and discreet, so you can easily hide it out of sight.



watching. To watch ITV while recording Channel 4, say, you need two TV tuners. Fortunately, MCE 2005 supports dual tuners. By Christmas, single-slot PCI cards with integrated dual tuners should be available. For the moment, though, two tuners require two TV cards. You can't mix and match tuners as both have to receive the same line-up of channels. This means you can't have an analogue card and a Telewest cable TV box, for instance. Microsoft provides a good step-by-step guide to setting up dual tuners on its website, along with a link to a very useful forum where you might be able to find answers to specific issues. Visit www.microsoft.com/windowsxp/using/mce/expert/bowman_dualtuners.mspx.

SPECIFICATIONS

Once you've decided which TV tuner to use, you need to think about your media PC's overall specification. While Windows XP MCE is picky about TV tuners, its system requirements are identical to those of Windows XP in other respects. This means that while you can get away with using 256MB of RAM, you really ought to have 512MB or even 1GB. When choosing a processor you need to consider what else you want your media PC to do besides recording endless episodes of 24. If you intend to edit video or photos or play games, get a faster processor. Bear in mind that however powerful your Media PC may be, you'll struggle to run any other task when recording TV because MCE hogs the hard disk.

Noise is an important consideration, unless you want the pivotal scene of every movie to be accompanied by the whirr of a processor fan. For this reason, AMD's Athlon 64 processors are a better choice than Intel's Pentium 4s, as they run cooler. Intel's Pentium M is even better, although it's more expensive. These chips were designed for notebook PCs, so they use very little power and produce little heat. Taiwanese firm AOpen now produces a range of motherboards and small form factor PCs that accept these chips. The Pentium M is no good for serious video editing, but as long as you buy the 1.6GHz chip or above, it'll run MCE well. Don't try to economise with a Celeron M, though, as it really lacks horsepower.

Beyond the processor and memory, there are three main hardware areas to concentrate on. The first is the motherboard and case. These are linked, because one determines the size of the other. While full-size ATX motherboards are cheap, the last thing you want next to your nice widescreen TV is a beige PC tower. A better choice is a small form factor case as they look good and can be quiet. As well as AOpen's excellent Pentium M Xcubes, a Shuttle box is worth considering. Shuttle's new Pentium 4-based SB83G5M has a cool mirrored front, while the Athlon 64-based SN95G5 looks even better with its sleek black fascia. Also worth investigating are microATX cases, such as Hiper's Media Chassis, for smaller motherboards.

Recording TV is one of the pleasures of owning a media PC, because MCE makes it so easy. You can record an entire series at the click of a button, and the excellent integrated programme guide makes it easy to find interesting shows to watch. You'll need a big hard disk, though. Go for 200GB or more.

The last important component is the graphics card. It doesn't need to be powerful unless you want to play games, but you should make sure it has S-video out or video in, video out (VIVO).



If Media Center can't find your channels automatically, try the Scan for Services option in the Setup menu



Media Center provides a TV guide for your channels, but it needs an internet connection to get it

This means you'll be able to use your TV to display all your media by connecting your graphics card to your TV's SCART input. As MCE is picky about its graphics hardware, you should check any prospective purchases against Microsoft's hardware compatibility list at www.microsoft.com/windowsxp/mediacenter/partners/dfw/partnerlisting.mspx. One last word of warning: MCE downloads all its program listings from the net, so if you intend to use your PC to watch TV, it needs internet access. Always-on access through a router is perfect, but you can set MCE to download updates over a dial-up.

BUILDING YOUR MEDIA CENTER PC

Once you've got all your hardware together, building a media PC is much the same as building a regular PC. Look at *PC Builder, Shopper* August 2005 for some tips and tricks. While you may want to run your media PC through a TV when it's working, it's much easier to hook it up to a monitor while you install and set it up. When you've built the PC, set the BIOS to boot from the CD and start the PC with the XP CD in the drive. The installation process is much the same as it is for Windows XP Home or Professional. Once Windows has installed, you need to install the drivers. Start with the motherboard, then the graphics card followed by sound and multimedia drivers. Generally speaking, if your TV tuner is compatible with MCE, its drivers should work with it. Until recently companies have dragged their heels over providing MCE drivers to the public. However, these days, the manufacturer's website should be able to help you with drivers.

It's also worth setting the PC to start the Media Center program as soon as it boots, by creating a short cut to it and placing it in the Start, Program Files, Start Up folder. You will also need to install DVD playback software. MCE uses the DVD codec to play movies and record TV. Cyberlink's PowerDVD and InterVideo's WinDVD are both available in MCE-compatible versions. Once

installed, they should mesh fairly seamlessly with MCE. DVD software is often supplied free with graphics cards, but it usually supports only stereo sound, so consider paying for full surround-sound support.

Once this is done, connect the media PC to the TV and set the graphics card to output to the TV. This is fairly simple and can be done by right-clicking on the desktop and clicking Properties, Settings, Advanced and then the Displays setting (it's nearly identical for both nVidia and ATI users). You then need to run the Media Center setup program, which is easy to control using the remote. Setting up the display and speakers is relatively simple. How easy it is to set up the TV channels depends on the strength of your TV signal and whether you're using an external cable box. If your TV signal is strong, the setup program makes setting up very easy. Provided your PC is connected to the web, it will then download the TV listings for the channels you have.

THE FINAL SETUP

When you tell MCE what type of TV signal (aerial or digital) you have, it can throw a spanner in the works by refusing to add any channels. There's actually a separate option to do this in the Setup menu, labelled Scan for Services. If you don't see any channels, try this option.

If you're using an external cable TV box, setup is more convoluted as MCE needs to be able to communicate with the box in order to change channels. The MCE remote and receiver is pretty flexible and can communicate with a large number of set-top boxes. However, some cable companies, such as Telewest, use set-top boxes that don't respond to standard infrared remote control signals. As a result, MCE can't send a signal that the box recognises. However, the Telewest box and its ilk often allow you to attach a device that translates standard remote signals into those understood by the Telewest box. They are available from sites such as the excellent www.redremote.co.uk. Setup details vary hugely depending on what sort of cable TV hardware you have. Red Remote's FAQ pages (www.redremote.co.uk/faqs.html) are an excellent resource, as are the diagrams on its setup pages (www.redremote.co.uk/setup.html).

Once you have the hardware to control your set-top box, the setup should be fairly simple. Run the TV signal setup wizard and tell MCE you have an external box. Answer the questions about your set-top box, and MCE will then get you to press buttons on the remote controls as it tries to learn how to control your set-top box. If you have the right hardware, MCE and your set-top box should get on like a house on fire.

Setup should now be complete. Don't forget that you can access some of MCE's advanced options only by right-clicking a mouse or pressing the More Info button on the remote control. If you want to change the order in which channels appear, for instance, or associate TV listings with a channel that has none, try right-clicking when you're in the programme guide. **CS**

NEXT MONTH

SILENCE YOUR PC

We reveal the best products and free tips to help reduce PC noise